California Department of Public Health - March 2008

Hepatitis A Public Health Investigation Quicksheet

Clinical symptoms
Acute, self-limiting viral illness associated with abrupt onset of fever, malaise, jaundice, anorexia, nausea, abdominal discomfort, and dark urine.

Development of clinical symptoms is highly age dependent; among older children and adults, infection is typically symptomatic with 70% presenting with jaundice. In children less than six years of age, 70% of infections are asymptomatic. Older persons and persons with chronic liver disease are more likely to have severe disease and HAV prevention in these groups is particularly vital.

Definition of immunity
Persons are considered immune if they have:

- received two doses of HAV vaccine; or
- a history of IgM or total anti-HAV positivity during or up to four months after consistent clinical illness; or
- are IgG anti-HAV positive.

Post-vaccination testing is not indicated because of the vaccine's high efficacy. Most adults will be protected within two to four weeks after one dose of vaccine.

Modes of transmission
Primarily fecal-oral transmission (e.g., consuming fecally contaminated foods or liquids). HAV is present in the blood and feces 10-12 days after infection. HAV is rarely transmitted by blood (e.g., via transfusion) or saliva.

Incubation period
A range of 15-50 days with a mean of 28 days.

Period of communicability
The highest levels of virus in the stool and the greatest likelihood of transmission occur during the one to two weeks before the onset of illness. After symptom onset, the risk of transmission diminishes and is minimal by one week after the onset of jaundice. HAV can be detected in the stool for longer periods (up to 10 weeks after illness onset), particularly in infants and young children.

Clinical case definition

- Acute illness with discrete onset of symptoms **and** jaundice or elevated ALT and AST levels.

In a CDC study, the median ALT was 1945 and the median AST was 1075 for persons who met the clinical case definition. Therefore, minimally elevated results are unlikely to be related to acute HAV infection.

Confirmed case definition
A patient who:

- meets the clinical case definition and is IgM anti-HAV positive; **or**
- meets the clinical case definition and has an epidemiologic link with a laboratory-confirmed case.

Laboratory testing
IgM anti-HAV is present at the onset of illness and usually disappears within four months, but may persist six months or longer. IgM anti-HAV is also occasionally detectable in adults two weeks after receiving HAV vaccine. IgG anti-HAV is detectable shortly after the appearance of IgM and remains for the person's lifetime.

False positive IgM anti-HAV
A positive IgM anti-HAV test result in a person without typical symptoms of HAV may indicate: 1) asymptomatic acute HAV infection; 2) previous HAV infection with prolonged presence of IgM anti-HAV; or 3) a false-positive test result.

IgM anti-HAV testing should be limited to persons with evidence of clinical hepatitis or those who have had recent exposure to an HAV-infected person and should not be used as a screening tool or as part of testing panels in the workup of nonacute liver function abnormalities because of the risk of false positive test results in such persons.

If a report of positive IgM anti-HAV is received on a patient who does not exhibit HAV symptoms or have a history of recent contact with an HAV infected person, repeat IgM anti-HAV testing should be considered before recommendations are made for post-exposure prophylaxis.

Pre-exposure prophylaxis (general)
HAV vaccination, given in a two dose schedule, is recommended for children 12 months through 18 years of age and for persons at increased risk of HAV infection. There is currently no recommendation for routine HAV vaccination of food handlers or healthcare workers.

Pre-exposure prophylaxis (international travel)
Susceptible persons traveling to countries with high or intermediate HAV endemicity should be vaccinated or receive immune globulin (IG) (0.02 mL/kg) before travel. A first dose of single-antigen HAV vaccine given up to the date of departure should protect most healthy persons.

Immunization Branch/Division of Communicable Disease Control
850 Marina Bay Parkway, Building P, 2nd Floor, Richmond, CA 94804
(510) 620-3737 Internet Address: www.cdph.ca.gov

For optimal protection, elderly adults, persons with chronic liver disease or other chronic medical conditions, or immunocompromised persons who are traveling to an endemic country within two weeks should receive the initial dose of vaccine and IG (separate injections at different injection sites). Travelers <1 year of age or in whom the vaccine is contraindicated should receive IG, which will provide protection for up to three months. Endemic countries can be identified at: http://wwwn.cdc.gov/travel/yellowBookCh4-HepA.aspx#362

Twinrix "accelerated" schedule
The first **three doses** of the Twinrix accelerated schedule provide equivalent protection to: the **first dose** in the standard, single antigen adult HAV vaccine series and the **first two doses** in the standard adult HBV vaccine series. Therefore, this schedule offers no particular benefit and CDC recommends the regular schedule when possible.

Post-exposure prophylaxis (PEP)
Susceptible close contacts should receive a dose of single-antigen HAV vaccine or IG (0.02 mL/kg) or both as soon as possible ≤2 weeks of exposure. The efficacy of PEP when given >2 weeks of exposure is unknown, but vaccine will protect against ongoing or future exposures.

For persons aged 1-40, vaccine is preferred. For persons >40 years, CDC prefers IG (although vaccine can be used if IG is not available) because of limited immunogenicity data for older people in the setting of an outbreak. However, other countries recommend vaccine as PEP in older people and there is evidence that vaccine is immunogenic in people <70 years of age. Therefore, CDPH suggests consideration of vaccine in persons >40 years of age because it confers long-term immunity.

Age/years	< 1	1-40	41-59	60+
Healthy	IG	Vaccine preferred	Vaccine and/or IG	IG preferred; consider vaccine
Other*	IG	IG	IG	IG

*Persons who are immunocompromised, or have chronic liver disease or other vaccine contraindications.

Persons receiving their first dose of vaccine should receive the second dose of vaccine according to the licensed schedule to complete the series. One source of IG is FFF Enterprises, which can be reached at the 24 hour number: 1-800-843-7477. For additional information on PEP, see: www.cdc.gov/mmwr/preview/mmwrhtml/mm5641a3.htm

Close contact definition
Household and sexual contacts, drug sharers and childcare center staff/attendees. Also consider persons with other types of ongoing, close contact (e.g., regular babysitters).

Risk for HAV transmission in different settings
HAV transmission risk varies by setting. Secondary attack rates are 15-30% in households and higher rates of transmission are associated with infected children. In contrast, attack rates are low among restaurant patrons who have been exposed to infected food handlers.

Food service settings
HAV-infected food handlers should be excluded for one week after symptom onset. PEP should be given to other food handlers at the same establishment.

Because transmission to patrons is unlikely, PEP is not routinely indicated for patrons, but may be considered if, while infectious, the food handler:

- directly handled uncooked or cooked foods; and
- had diarrhea or poor hygienic practices (it should be ensured that handwashing facilities are available); and
- patrons can be identified and treated no later than two weeks after exposure.

If repeated exposures might have occurred (e.g., in an institutional cafeteria), stronger consideration of PEP may be warranted.

In a common source outbreak, PEP is not indicated for exposed persons after cases have begun to occur because the two week period during which PEP is known to be effective will have been exceeded. If a common source is suspected in two or more cases, the CDC Hepatitis Reference Laboratory can perform molecular typing. Contact CDPH at 510-620-3737 for more information.

Childcare settings
HAV-infected staff and attendees should be excluded for one week after symptom onset. PEP is indicated for previously unvaccinated staff/attendees if a case of HAV is diagnosed in staff/attendees or if HAV cases are diagnosed in two or more households of attendees. If children at the affected center are too old to need diapering, PEP need only be given to classroom contacts of the index patient. If HAV cases occur in three or more attendee households, PEP should be considered for members of households that have attendees in diapers.

Healthcare settings
PEP is not routinely indicated for staff who have provided care for an HAV-infected patient. When providing care for HAV-infected patients, contact precautions are recommended (in addition to standard precautions) for diapered and incontinent patients for at least one week after symptom onset. PEP is indicated for persons who have had close contact with cases if an epidemiological investigation indicates that HAV transmission has occurred among patients or between patients and staff.

Schools and other work settings
PEP is not routinely indicated when a single HAV case occurs in an elementary or secondary school or in work settings other than those specified above. PEP is indicated for persons who have close contact with index cases if an epidemiological investigation indicates that HAV transmission has occurred among students at a school.